

## PSITTACOSIS.

## MINISTRY OF HEALTH REPORT.

THE Ministry of Health issues this week a report entitled "A disease of parrots communicable to man (psittacosis)."<sup>1</sup> It has been compiled by Dr. E. L. Sturdee and Dr. W. M. Scott, medical officers of the Ministry, who give a detailed account of psittacosis, and conclude that its cause is probably a filterable virus. In the preparation of this report the collaboration was secured of Drs. S. P. Bedson, G. T. Western, and S. Levy Simpson, all of the London Hospital. Dr. Mervyn Gordon of St. Bartholomew's Hospital contributes an article on virus studies in relation to this infection. In a prefatory note the Chief Medical Officer of the Ministry outlines the events which led to the focusing of attention in 1929 on this disease. He recalls the issue of the explanatory memorandum, the instituting of an inquiry by the medical staff of the Ministry, and the decision to prohibit the importation of parrots, which is still in operation.

*Historical Aspects.*

Dr. Levy Simpson gives an interesting account of the historical study of psittacosis, and indicates its bearing on the problems of epidemiology and etiology. The first recorded epidemic occurred in Switzerland in 1879, and the disease was then recognized as presenting the symptoms and signs of both pneumonia and typhoid fever. The incubation period was estimated as being from nine to fourteen days, which is very much the same as that accepted to-day; but no evidence was obtained of human case-to-case infection. Examinations of the dead birds, conducted by Professor Eberth, were negative. The next considerable epidemic was that of 1892 in Paris, when several successive cases of pneumonia were found to coincide with an importation of parrots from Buenos Aires. The conclusion was reached that the outbreak was of human origin, and not a parrot disease transmissible to man, but a year later two family outbreaks of a similar disease in Paris coincided so closely with the acquirement of sick birds as to make a causal connexion seem inevitable. The hypothesis of psittacosis as a specific infection gained strong support from the work of Nocard on material from the birds imported in 1892. In the bone marrow of dried wings of parrots which had died on the voyage he found a peculiar short highly motile Gram-negative bacillus, resembling organisms of the *Salmonella* group. A review in 1906, by Gilbert and Fournier, of the psittacosis outbreaks in France resulted in the appearance of a good clinical account of the disease in human beings, and the recognition of the possibility of infection from man to man. Dr. Levy Simpson describes the epidemics of psittacosis in Germany in 1896 and 1898, in the United States, in South America, and in England. He concludes with the expression of a strong opinion that all lines of investigation—namely, the epidemiological, clinical, pathological, and bacteriological—support abandonment of the erroneous hypothesis of a *Salmonella* infection, and incriminate a filterable virus detected by the work of Drs. Bedson, Western, and himself.

*Epidemiology.*

The recent widespread epidemic of psittacosis is alleged to have arisen in Brazil, but no human cases have been reported from that country. This is not considered surprising, because the disease does not probably assume epizootic proportions among birds in the wild state; in wooded tropical countries, moreover, the dead bodies of birds are quickly destroyed, and are unlikely to infect human beings. The case is, however, altered when the birds are living in captivity, and details are given of the bad sanitary conditions which have been prevailing

in this connexion. Dr. Mervyn Gordon mentions that the birds at the Zoological Gardens are kept under the best hygienic conditions, and that infectious diseases are thus prevented from spreading in the same way as is possible during transport to this country. In addition to Brazilian parrots, grey African parrots have apparently been the cause of infection sometimes; three cases were due to love-birds, and one to a canary. Several cases from the Argentine have been attributed to sick thrushes. Mice and domestic fowls have been experimentally infected with material obtained from fatal human cases, and from parrots and budgerigars, but no human cases have been traced to a subsequent infection. The length of time during which a parrot may remain in a subacute infectious condition has not been fully determined, but it has been shown that the dead birds remain infectious for a very considerable number of months.

The evidence in favour of occasional human transmission of the disease seems to be unassailable, but no instances of infection of hospital nurses in attendance on psittacosis patients has been recorded in England, probably due in part to the insistence on such precautions being taken as are observed in cases of typhoid fever. House epidemics have characterized outbreaks of psittacosis, distinguishing them from influenza epidemics and pandemics. No cases have occurred where there has been no association with infected birds or patients. The curious immunity revealed among those engaged in the bird-fancying trade has attracted some attention, but the opinion is expressed that this may have been due in part to faulty diagnosis. Psittacosis is not an invariably fatal disease, and it is possible that one attack confers lifelong immunity; moreover, the report suggests that a person whose contact with birds is part of his usual employment will not generally come into such close contact with them as will a private owner, who caresses his pet parrot, feeds it from his mouth, and allows it to climb over him. Cases of psittacosis have, however, been reported among persons professionally interested in birds, and the apparent immunity to infection of the bird fancier cannot be held to detract to any extent from the value of the evidence in favour of this disease being conveyed by sick birds. Young children seem to be less susceptible than adults, and in the English series only four patients were under the age of 10.

*Clinical Aspects of Psittacosis.*

A valuable description is given of the clinical manifestations of psittacosis in man, based on a study of about eighty cases. The duration is said to be about two or three weeks, but in a few instances the symptoms continued with maintained pyrexia for as long as eight weeks. Convalescence is nearly always protracted and tedious, and may be interrupted by temporary relapses or by thrombosis of the femoral vein. The incubation period appears to be usually about ten days, but may be as short as four or as long as sixteen. At first the patient feels comparatively well in spite of high fever, epistaxis, chills, and generalized pain. Towards the end of the first week profound exhaustion ensues, and the patient becomes both somnolent and intermittently irritable. A troublesome paroxysmal cough appears and persists through the second week. Crepitations and scattered rhonchi are heard in the lungs, and patchy areas of consolidation develop, fusing together so as to involve considerable portions of one or both lungs. During the second week the patient may be semi-comatose; muttering delirium is usually present, and may alternate with periods of restlessness, or even violent excitement. When the prognosis appears to be hopeless the temperature sometimes begins to fall by lysis, and signs of improvement are seen. Mild, and even ambulatory, cases occur, but there is uncertainty as to what determines the degree of resistance of the patient. Epistaxis occurred in about 25 per cent. of the cases, usually on the first day. Headache was a constant feature at the beginning of the illness, reaching its maximum intensity in about ten days, and then gradually diminishing. The site was variable, but was usually frontal or occipital. Sore throat was frequent, and might be very severe; the fauces and soft palate were red and congested, and sometimes there was a yellowish exudate. Sordes of the lips were not unusual, and herpes

<sup>1</sup>Ministry of Health. Reports on Public Health and Medical Subjects. No. 61. A Disease of Parrots Communicable to Man (Psittacosis). By E. L. Sturdee, O.B.E., M.R.C.S., and W. M. Scott, M.D. London: H.M. Stationery Office. 1930. (2s. 6d. net.)

labialis occurred in a few cases. Cough was a common feature; it gradually increased in intensity until the paroxysms shook the whole body, leaving the patient entirely exhausted, preventing sleep, and aggravating the headache. The expectoration in most cases was very scanty, and sometimes absent. The sputum was usually mucoid, but might be mucopurulent or frankly purulent; examination of it revealed not infrequently a secondary infection of the lungs. One of the remarkable features of the disease usually was the absence of rapid or deep breathing, even when the physical signs indicated extensive pulmonary involvement. Rapid respiration, when present, appeared generally towards the end of the second week; in no instance was orthopnoea present. The pulse was relatively slow compared with the temperature, and this disproportion persisted in most cases throughout the illness. A "typhoid state" was common in all the severe cases, and the gastro-intestinal tract was usually involved to some extent. Rose spots, or similar skin lesions, were noted in nine cases. The mortality rate was about 20 per cent. Prognosis was difficult, but marked involvement of the nervous system foretold a dangerous illness, and absolute coma usually ended in death. Rigors, though often dramatic and repeated, were found to have no prognostic value.

#### *Pathological Findings.*

The changes found at necropsy were those of a general septicaemia, together with an inflammatory condition of the lungs, in some cases recalling the influenzal pneumonia of 1918. The lesions did not conform with those of classical lobar pneumonia or of broncho-pneumonia. There was usually intense engorgement, proliferation, and desquamation of epithelium, leucocytic infiltration, and increasing haemorrhage. This was followed by an abundant exudate, at first serous but later becoming fibrinous, and an increasing capillary thrombosis extending to the pulmonary arteries. The consolidation was of the lobar type, with practically no polymorph reaction. Though the bronchioles were involved with the rest of the lung substance, nothing was found to suggest that the lesion was specially related to them. Areas of degeneration and haemorrhage were found in the muscles, chiefly the rectus abdominis. The kidneys and liver showed parenchymatous degeneration, and a diffuent red septic spleen was a common finding. The stomach and intestines nearly always escaped any severe lesions. Congestion and oedema of the brain and spinal cord were not infrequent.

#### *Etiology.*

The second part of the report is devoted to a detailed record of experimental observations by Drs. S. P. Bedson and G. T. Western. They studied human cases in the recent epidemic; examined patients associated with them, and inoculated birds with infective material, their experimental work being controlled by the observation of parrots unconnected with any cases of human illness. An account is given of the steps by which the conclusion was reached that a filterable virus was concerned. It was found that the psittacosis virus withstood desiccation and the action of diluted glycerin, as well as the addition of a small quantity of ether. Exposure for thirty minutes to a temperature of 50° C. inactivated most of the virus, but not always all of it. It was shown that the virus was capable of passing through the Seitz filter, but that probably a good proportion of it was stopped.

An outstanding feature of Dr. Mervyn Gordon's experimental work was the discovery that strains of virus maintained and even increased their violence by passage through mice. Dermotropic and neurotropic affinities displayed by this virus for rabbits, after mouse passage, suggest that it may belong to the same group as the herpes virus; this is a problem specially noted in the report as calling for further investigation. The virus derived from the human cases did not display the same degree of pathogenic capacity or stability for mice as that obtained from parrots, and it is suggested that the mouse may perhaps be a more valuable means for the isolation and study of viruses than has hitherto been realized.

## England and Wales.

### **London School of Medicine for Women.**

THE annual dinner of the London (Royal Free Hospital) School of Medicine for Women took place at the Savoy Hotel on December 4th, with Mr. Malcolm Henderson presiding. About 450 sat down at the tables. The toast of "The School and Hospital" was in the hands of Mr. St. John Ervine, who confessed that he had been brought up to think that a woman doctor, or, indeed, any educated woman, was a forbidding person with a glum look, and that she had probably taken to learning only because she could not take to marriage. That was still the opinion of many men of the world—a rather ignorant body of men—and he would like to bring them into the present company and let them have a look at a gathering of women doctors, when their prejudices would be quickly dispelled. He suggested that one of the main reasons why women had become so closely connected with medicine was that they were discontented with the lighthearted treatment by men of female aches and pains. In conclusion, Mr. Ervine paid a tribute to the great woman attached to the London School of Medicine for Women (Dame Mary Scharlieb) who had just passed away. He felt that one had said almost everything that need be said about the hospital and school in remarking that out of it came a noble woman who did noble things. Mr. Malcolm Henderson, in replying to the toast, said that there was no need to affect modesty in speaking of what the hospital and school had done during the present year. This year the hospital and school were entering into an agreement which was virtually a permanent one—at all events, it was to last for fifty years—and he was sure this closer union would be happy. The year had also been memorable by the opening of a new wing of the hospital, thanks to the great generosity of Mr. Eastman, Lord Riddell, and Sir Albert Levy. This new wing would enormously increase the scope and usefulness of the hospital. He thought it rather remarkable that in these troublous times the entries to the school should not only have been maintained but increased in number. For his own part he felt extraordinarily honoured in having been associated for twenty-five years on the council of the school with the women to whose courage and wisdom and unbounded faith in the cause all this had been due. Mr. L. E. C. Norbury proposed the health of the guests, coupling with the toast the names of Mrs. Kinnell, who had done excellent work on the Hospital Board and was chairman of the Appeal Committee on behalf of the Extension Fund, and Lord Moynihan, President of the Royal College of Surgeons. Mrs. Kinnell, in responding, said that it was always a great pleasure to be associated in any way with the School of Medicine of the Royal Free Hospital. A few weeks ago Mr. Baldwin had remarked that women in higher education were not as fortunate as men in that they had no traditions; but there was something in life which was even greater than inheriting a tradition, and that was to create one. Lord Moynihan, in response, said that women, not only in medicine but everywhere else, were making better day by day. The year 1930 had been a women's year. Their recent achievements had made him think that women were capable of the greatest things in life. It had been said by many people that no woman would ever make a surgeon, because her courage would fail at the critical moment. He happened to meet one of those challengers only that afternoon, and said to him, "When two people were stranded in the straits of Messina last night, it was the woman who swam ashore." As to the future of women in medicine, he thought they had not yet quite found their role. They had the most marvellous sense of intuition, and he hoped their great faculties would be exercised in a far larger measure than had yet appeared in laboratory research. In that, and also in certain other technical directions, he believed there was a very great future open to women. The final toast, that of "The Chairman," was proposed by Miss Waller, and after the chairman's brief reply, the dinner was followed by a dance.